C L A I M S

1. A film deposition apparatus comprising:

a container forming a processing chamber for processing a target object;

a mounting table which is provided in the processing chamber and on which the target object is mounted;

a first heating apparatus provided in the mounting table, for heating the target object mounted on the mounting table;

a first gas supply section provided in the container, for supplying processing gas into the processing chamber, the processing gas forming a high-melting-point metal-film layer on the target object mounted on the mounting table;

a movable clamp for clamping an edge portion of the target object and holding the target object on the mounting table;

a second heating apparatus formed separately from the clamp, for heating the clamp indirectly;

a gas flow path formed between the clamp and the second heating apparatus when the clamp is moved to a position where the clamp clamps the target object; and

a second gas supply section for causing backside gas to flow into the gas flow path.

2. The film deposition apparatus according to claim 1, wherein the gas flow path extends so as to

pass the edge portion of the target object clamped by the clamp and a periphery of the mounting table.

3. The film deposition apparatus according to ~~one of claims 1 and 2~~, wherein the backside gas acts as a heat-transfer medium for transferring heat from the second heating apparatus to the clamp.

4. The film deposition apparatus according to ~~one of claims 1 and 2~~, wherein the backside gas acts as film-depositing prevention gas for preventing the processing gas from diffusing around the edge portion of the target object.

5. The film deposition apparatus according to ~~one of~~ claims 1 ~~and 2~~, wherein the backside gas acts as cleaning gas for removing a film from the edge portion of the target object.

6. The film deposition apparatus according to claim 1, wherein the backside gas is constituted of inert gas.

7. The film deposition apparatus according to claim 1, wherein the backside gas is constituted of same gas as part of gas components constituting the processing gas.

8. The film deposition apparatus according to claim 1, wherein the high-melting-point metal-film layer is formed of one of titanium and a titanium alloy.

9. The film deposition apparatus according to claim 1, wherein the gas flow path is provided with a

buffer section for controlling conductance of the gas flow path.

10. The film deposition apparatus according to claim 1, further comprising a control section for controlling a heating value of the second heating apparatus such that temperature distribution on an entire processing surface of the target object is uniformed.

11. The film deposition apparatus according to claim 1, wherein the clamp is shaped like a ring and clamps all of the edge portion of the target object against an inner edge portion thereof.

12. The film deposition apparatus according to claim 11, wherein the inner edge portion of the clamp, against which the target object is clamped, has a tapered surface which is brought into line contact with the target object.